



Billing Code: 4310-MR-W

DEPARTMENT OF THE INTERIOR

Bureau of Ocean Energy Management

Docket BOEM-2011-0095

**Request for Information on the State of the Offshore Renewable Energy Industry –
Auction Format Information Request (AFIR)**

AGENCY: Bureau of Ocean Energy Management (BOEM), Interior.

ACTION: Request for Information.

SUMMARY: BOEM invites public comment on a proposed set of auction formats which may be used to issue commercial renewable energy leases on the Outer Continental Shelf (OCS). BOEM is examining several auction formats, each designed to efficiently issue renewable energy leases to those who value them most and are best positioned to develop them, while also ensuring that the government receives a fair return in exchange. BOEM is focusing primarily on variations of Ascending Clock Auctions and Package Auctions formats described in more detail below. BOEM is also considering a multiple factor auction approach in which bidders can earn a discount on their bids submitted under one of the auction formats noted above, based on company-specific attributes deemed relevant to the success of their projects. The auction format selected for each sale area would likely vary based on the actual characteristics of that sale. Such characteristics could include the size and homogeneity of the area to be offered. BOEM will hold a workshop to help familiarize stakeholders with the auction format options and to solicit feedback on Friday, December 16, 2011, at the South Interior Building in Washington, D.C.

DATES: Comments should be submitted electronically or postmarked no later than [INSERT DATE 45 DAYS FOLLOWING THE PUBLICATION OF THIS DOCUMENT IN THE FEDERAL REGISTER]. All written comments received during the comment period will be made available to the public and considered during preparation of Proposed Sale Notices (PSN) pertaining to the competitive leasing of OCS lands to support the development of offshore wind energy resources.

ADDRESSES: Potential auction participants, Federal, state, and local government agencies, tribal governments, and other interested parties are requested to submit their written comments on the contents of this AFIR in one of the following ways:

1. *Electronically:* <http://www.regulations.gov>. In the entry titled “Enter Keyword or ID,” enter BOEM-2011-0095 then click “search.” Follow the instructions to submit public comments and view supporting and related materials available for this document.
2. *Written Comments:* In written form, delivered by hand or by mail, enclosed in an envelope labeled “Comments on Offshore Wind AFIR” to: Economics Division, Bureau of Ocean Energy Management, 381 Elden Street, MS 4050, Herndon, Virginia 20170-4817.

FOR FURTHER INFORMATION CONTACT: Greg Adams, BOEM Economics Division, 381 Elden Street, MS 4050, Herndon, Virginia 20170-4817, (703) 787-1537 or greg.adams@boem.gov; or Wright Frank, BOEM Office of Renewable Energy Programs, 381 Elden Street, HM 1328, Herndon, Virginia 20170, (703) 787-1325 or wright.frank@boem.gov.

SUPPLEMENTARY INFORMATION:

Authority

This request for information is published pursuant to subsection 8(p) of the OCS Lands Act (43 U.S.C. 1337(p)), as amended by section 388 of the Energy Policy Act of 2005 (EPAAct) and the implementing regulations at 30 CFR 585.116, which authorize the Director of BOEM to solicit information from industry and other relevant stakeholders to evaluate the state of the offshore renewable energy industry, including economic matters that promote or detract from continued development. The information received may be used to evaluate program options to promote safe and environmentally responsible development in a manner that ensures a fair value for use of the nation's OCS.

Purpose of the AFIR

The purpose of this information request is to invite public comment on the auction format options described in this request. Due to the complexities associated with lease valuation and optimal lease configurations, renewable energy leasing will require more diverse approaches than the sealed-bid, cash bonus approach used to issue offshore oil and gas leases.

The auction formats and their specifications are designed to address important program objectives, including:

- **Fair Return:** BOEM is statutorily required to obtain a “fair return” for leases and grants on the OCS;
- **Economic Efficiency:** The lease auction process should try to ensure that commercial renewable energy leases on the OCS are awarded to those who value the areas the most;

- **Program Efficiency:** The lease auction process must be manageable for BOEM to administer;
- **Lease Boundary Flexibility:** Within constraints fixed by BOEM, the auction should allow bidders to identify the optimal lease areas;
- **Competition:** The lease auction process must be fair, and encourage participation from all interested bidders;
- **Transparency:** The lease auction process must be an open one in which bids are comparable and the reason why the winners won is clear;
- **Neutrality:** The lease auction process must ensure that all bidders are treated equally;
- **Simplicity:** The lease auction process must be easily understood and implemented, by both the bidders and BOEM; and
- **Consistency:** The lease auction process should be applicable to the issuance of leases in a variety of potential renewable energy development contexts.

BOEM contracted with Power Auctions LLC to study auction formats for issuing renewable energy leases (hereinafter, “Ausubel and Cramton (2011a), (2011b), and (2011c),” respectively). Based on its findings and BOEM’s own internal research, BOEM has identified several potentially suitable auction formats. A more comprehensive discussion of these auction formats prepared by BOEM staff, along with the Power Auctions LLC study, can be found on BOEM’s web site at

<http://www.boem.gov/Renewable-Energy-Program/Regulatory-Information/Renewable-Energy-Auction-Formats.aspx>.

Preference for Bidding on the Cash Bonus

Although BOEM has the authority to conduct an auction with either the cash bonus or operating fee rate as the bid variable, the bureau generally prefers using the cash bonus. Conducting an auction with the bonus bid as the variable has a number of benefits. It allows straightforward comparison of competing offers and tends to award leases to developers with good financial backing. Because the winning bidders would need to pay the bonus bid before the lease is issued, it prevents undercapitalized bidders from committing to a greater payment than they can afford. Refer to Section 2.3 in Ausubel and Cramton (2011a) for further discussion.

Single Lot Auctions: Simple Ascending Clock Auction Format

In a single lot auction, there is only one object of bidding (“lot”), and the entire lease area would be auctioned off as a single entity. BOEM could use a single lot auction in situations where it is expected that only one lease would be practical for the available acreage, because the area would not be large enough to support multiple projects.

In a single lot auction utilizing an ascending clock auction format, BOEM would set an initial asking price for the single lot, and bidders would indicate whether or not they are interested in bidding for that lot at that price. If BOEM received more than one bid, BOEM would increase the asking price, which “ticks” up like a clock, until only a single bidder is willing to meet the announced price. This format enables price discovery by the bidders during the auction and reduces the guesswork required for bidders to value offshore leases.

One complication of the simple ascending clock auction is that a tie-breaking procedure is needed when all the remaining bidders drop out in the same round. Exit bids

are one practical way of solving this problem in the single lot case. An exit bid allows bidders who are unwilling to meet the next round's bid price to specify the maximum price they would be willing to pay short of the new asking price. If all remaining bidders drop out from one round to the next, the bidder with the highest exit bid would prevail. Another tie-breaking procedure would be for BOEM to incrementally reduce the current asking price until one bidder bids. In either approach, if the tie persists after the tie-breaking procedure, the winner could be determined based on a random draw. Refer to Section 5.2 in Ausubel and Cramton (2011c) for further discussion.

Multiple Lot Auctions: Simultaneous Ascending Clock Auction Format

In most lease sales, BOEM expects to issue multiple commercial renewable energy leases in the same auction. In this case, BOEM is considering the use of a Simultaneous Ascending Clock Auction (SACA).

In such a lease sale, BOEM would divide the entire area offered for leasing into smaller lots which would be the objects of the bidding. To form the lots, BOEM would likely use OCS lease blocks (approximately 3 statute miles by 3 statute miles), aliquots (squares $1/16^{\text{th}}$ that size), or some combination of these. The auction would enable bidding on all of the lots simultaneously.

BOEM would set a minimum asking price for each lot. Bidders would bid on the combination of lots they are interested in at that price. The bid price set by BOEM for contested lots (those receiving two or more bids) would increase in the next round, while the price for uncontested lots (those receiving zero or one bid) would remain the same in the next round. BOEM would publish the announced prices and the number of bids on each lot at the outset of each round in the auction.

A lot which is uncontested through several rounds may become contested because, as the auction proceeds, a bidder can shift its bids, for example, from a contested lot to an uncontested lot. If a bidder submits the only bid on a particular lot, the standing price for that lot remains unchanged through subsequent rounds until an additional bid is submitted on that lot at the standing bid price, or the auction ends. As soon as an uncontested lot receives more than one bid, it is treated as a contested lot.

If any bidder finds that it has submitted a bid on a contested lot, in the next round that bidder can either:

- Meet the new asking price for this lot;
- Drop its bid for this lot and submit a new bid elsewhere; or
- Drop its bid for this lot and not submit a new bid elsewhere.

The auction ends when no lot has more than one bid at the last-announced asking price set by BOEM. Because any bidder can move a bid from a contested lot to another lot, the auction for any particular lot is not over until bidding has concluded for all lots. The winning bidders are those with active bids in the final round and they are obligated to pay the final round prices for the lots they win.

Bidding in a SACA auction must comply with a set of rules that BOEM will include in the Proposed and Final Sale Notices. For example:

- A bidder may only bid on contiguous lots to form a single lease.
- Bidders who want to acquire multiple lease areas must register for the auction as separate bidding entities.
- Bidders may maintain or reduce the number of lots they bid on from one round to the next; but they may not increase the number of lots they bid on from one round to the

next. This helps to control certain opportunities for gaming, and drives the auction towards a timely conclusion.

- A “bid eligibility rule” would determine the maximum number of lots that a bidder is eligible to bid on in the auction in the opening round, or in any subsequent round of the auction. Bidders’ eligibility is based on the amount of money posted as their bid deposit. The maximum number of lots that a bidder may bid on equals the maximum number of lots that would be covered by the bidder’s deposit at the opening bid price.
- Bidders may submit an exit bid amount for a particular set of lots in any round. An exit bid can only win if the auction ends in that round, and there is no higher bid on any of the lots in the set. If any of these conditions is not met, the bid is set aside and the bidder exits the auction.

The SACA format provides an opportunity for price discovery like the ascending clock auction format used to bid on a single item. Also, the SACA format permits a bidder to identify combinations of lots which support its particular plan for a commercial offshore wind energy project. Refer to Section 5 in Ausubel and Cramton (2011a) for further discussion of clock auctions and Section 5.3.5 in Ausubel and Cramton (2011c) (Alternative I) for an example of how they work.

One potential problem with the SACA format arises when multiple bidders who have submitted bids on the same lots simultaneously drop out of the auction. In this situation, designing and implementing tiebreaking rules becomes complex. Under the sample rules described above, because bidders may not increase the number of lots on which they bid from one round to the next, large and potentially high-value areas in the auction area may go unclaimed (hereinafter, “undersell”). The difficulty of designing

effective exit bidding rules for multiple lot auctions limits their potential effectiveness in addressing undersell. As a result, it may be a challenge to fully achieve program goals such as optimal configuration of the winning sets of packages and ensuring receipt of fair value with the SACA format.

Alternative for Multiple Lot Auctions: Package Auctions

Several variations of the package auction format merit consideration for leasing packages of lots for offshore development of electricity from wind resources. Below are brief outlines of three such package auction variants. More detailed descriptions of these auction formats are available on BOEM's web site. A "package" is the arrangement of lots that a given bidder has selected in a given round of bidding paired with the price the bidder is willing to pay in that round for that arrangement of lots.

- One variant is a single-phase package clock auction where the bidding would proceed just like a SACA. However, BOEM could select the best arrangement of packages from earlier rounds of the auction to maximize seller revenue, perhaps subject to the condition that the prevailing bids in the final round are included in the winning set of lots. If the SACA phase of bidding resulted in a significant undersell, BOEM could revive early round bids to "fill in" undersold areas.
- A second variant builds on the first variation, but allows bidders to add a number of additional package bids at the conclusion of the SACA phase through a supplemental round of sealed bidding. BOEM would then consider all bid configurations from all the SACA rounds and the supplemental round in determining the winning set of lots based on revenue maximization. Note that any time BOEM proposes a sealed bidding round, we would consider using a "Second Price Rule," in which the winning bidder would only be

required to pay the amount bid by the next highest bidder. This prevents a winning bidder from paying more than would have been necessary to win. The Second Price Rule can also benefit the government by discouraging “bid shading.” This happens when a bidder bids the amount the bidder thinks will win instead of the amount the bidder thinks the lot is worth, in order to avoid overpaying.

- A third variant would use a non-clock ascending package auction format. In this format, bidders would select packages and also name the price they would pay for those packages. In contrast to the clock formats, bidders would submit a price at or above the minimum required bid increment for their desired package in each round, and the set of packages with the greatest auction revenue would become provisional winners at the end of each round. The auction would end when none of the bids change from one round to the next. BOEM would examine all the packages submitted and select the packages that maximize revenue.

For each of the auction formats listed above, BOEM would need to determine what information is given to bidders at the outset of each round of the auction. For example, bidders could be informed of the number of bids for each lot submitted in the previous round. Bidders in a clock auction (variations 1 and 2) would also be informed of the announced price for each lot, while bidders in a non-clock auction (variation 3) would be informed of the aggregate dollar amount of active high bids.

Theoretical work, including the contract study mentioned earlier, indicates that a package clock auction with a supplemental bidding round is the most effective method for improving auction efficiency. However, BOEM is concerned about designing and using this approach in initial sales, given its reliance on complex bidding rules and

solution algorithms, in conjunction with the need to prepare and publish these complicated bidding rules in a transparent manner.

Expanded details on both the clock and non-clock options under consideration are available on BOEM's web site, and we encourage comments on the more complicated package auction alternatives and their appropriateness in early auctions. Refer to Section 6 in Ausubel and Cramton (2011a) for an overview of clock auctions and Section 5.3 in Ausubel and Cramton (2011c) for a comparison of the package clock approaches with examples and further explanation of the rules.

Multiple Factor Auctions

The auction formats described above in this notice are considered sufficient to meet the agency's needs in a wide variety of contexts. However, in certain limited circumstances, BOEM may determine that other factors, along with cash bids, should be considered in determining how it issues leases and, indirectly, how much winning bidders should pay. For example, as BOEM noted in publishing its regulations in 2009:

[D]uring the time that [BOEM] has been promulgating this rule, the States of Delaware, New Jersey, and Rhode Island have conducted competitive processes and have selected companies to develop wind resources on the OCS. We believe that the pre-existing State processes are relevant to the competitive processes that [BOEM] is required to conduct following approval of this rule. We intend to do so by using a competitive process that considers, among other things, whether a prospective lessee has a power purchase agreement or is the certified winner of a competitive process conducted by an adjacent State.

74 Fed. Reg. 19,663 (Apr. 29, 2009). Therefore, in certain circumstances, BOEM will consider holding “Multiple Factor Auctions,” in which non-financial considerations are taken into account at the outset.

If BOEM decides to employ such an auction format, it proposes to do so in a two-phase auction: a non-monetary phase, followed by a second phase using one of the standard auction formats described above. Prior to the auction, BOEM would announce the non-monetary factors to be considered, and the value assigned to each factor. To ensure a fair and transparent process and to ease the task of implementing the auction, BOEM would use a limited number of objective, “yes-no” factors. Examples of such factors could include:

- Do you currently hold a firm financial commitment for the sale of at least 100 MW of power from a proposed offshore wind development in the lease sale area in the form of either a firm purchase power agreement (PPA) that has been approved by the state utility commission or its equivalent OR an ocean renewable energy credit approved by the appropriate state agency?
- Have you completed installation of a meteorological measurement tower on a BOEM limited lease located within the lease sale area?

Each factor would be assigned a percent discount to be applied against the amount that winning bidders would be required to pay BOEM following the auction. Between the non-monetary phase and the monetary phase, each bidder would be informed of the total discount for which it qualifies. To encourage competition and balance non-financial and financial bidding factors in the auction, BOEM is not likely to offer a bidder a discount of more than 25 percent on the basis of non-monetary factors. Refer to Ausubel

and Cramton (2011b) and Sections 3 and 4 in Ausubel and Cramton (2011c) for further evaluation of multiple-factor approaches.

Comments and Responses Requested

BOEM is requesting that the public and any interested or affected parties provide specific and detailed comments regarding the auction format recommendations described herein and in the supporting materials. In addition, BOEM is providing the following list of questions to which it is seeking substantive responses, including rationales and explanations for the answers provided.

1. How should we configure and size auction lots? Should lots generally correspond to an OCS block? What characteristics should BOEM take into account when subdividing a wind energy area into lots represented by OCS blocks or by OCS blocks grouped into zones or project areas? Refer to Sections 6.1.1 and 7.1 in Ausubel and Cramton (2011c) for discussions of lot designation.
2. Should the lots auctioned to a single bidder consist of contiguous OCS blocks? Refer to Section 6.2.9 in Ausubel and Cramton (2011c) for a discussion of the contiguous lots rule.
3. Should each bidding entity be limited to bidding on a single contiguous set of blocks?
4. What restrictions should be placed on bidders seeking more than one package of lots during an auction?
5. What factors contribute to the size of an area needed to support an economically viable offshore wind energy facility? Should there be an established rule-of-thumb used

to determine the minimum and maximum number of OCS blocks needed? Refer to Section 4.4 in Ausubel and Cramton (2011c) for a discussion of competition constraints.

6. At what asking price per block or per acre should BOEM commence the auction? In other words, what is an appropriate minimum bid per block? At what minimum asking price would you consider not participating in the auction? Refer to Section 6.2.6 in Ausubel and Cramton (2011c) for a discussion of reserve pricing.

7. Which of the auction formats discussed and referenced in this notice do you prefer BOEM use? Does your answer differ by location? Which features of the auction formats would you like to see modified or eliminated?

8. Do the concerns associated with a SACA format (e.g., undersell) justify the added complexity of a package auction? Refer to Section 5.3 in Ausubel and Cramton (2011c) for an example of how undersell occurs.

9. BOEM is considering using a “second-pricing rule” in certain specific contexts, including any auction that includes a sealed-bid phase. How important is it to you that the auction format includes such a second-pricing rule? Would you offer your maximum value as a bid for all lots of interest under a second-price auction formulation? Refer to Section 5.3.11 in Ausubel and Cramton (2011c) for a discussion of winning price determination.

10. What aspects of the auction formats discussed in this note concern you the most? Which features would you like to see retained in practice?

11. What additional factors should BOEM consider in a multiple factor auction beyond those enumerated in this Information Request? How should all of these factors

be weighted? Refer to Section 4.1.3 in Ausubel and Cramton (2011b) and Section 3.2 in Ausubel and Cramton (2011c) for a discussion of factor design and weighting.

12. Should lots in desirable locations be weighted differently than those of equal size in less desirable locations? Would this potentially affect your level of activity during the auction? For example, BOEM could adjust rules such that a bidder could expand the number of lots bid on if those lots are in an area that BOEM had determined is less desirable. This is described further in the materials available on BOEM's web site. Refer to Sections 5.3.8 and 6.2.7 in Ausubel and Cramton (2011c) for discussion of such rules.

13. Are there auction formats not included in this Information Request that BOEM should consider?

Please provide responses to the above questions, and/or any comments or suggestions on the auction formats and activity rules discussed in this Information Request and referenced in the material at BOEM's web site at <http://www.boem.gov/Renewable-Energy-Program/Regulatory-Information/Renewable-Energy-Auction-Formats.aspx>.

References:

Ausubel, Lawrence M. and Peter Cramton (2011a) "Auction Design for Wind Rights," Report to Bureau of Ocean Energy Management.

Ausubel, Lawrence M. and Peter Cramton (2011b) "Multiple-Factor Auction Design for Wind Rights," Report to Bureau of Ocean Energy Management.

Ausubel, Lawrence M. and Peter Cramton (2011c) “Comparision of Auction Formats for Auctioning Wind Rights,” Report to Bureau of Ocean Energy Management.

__November 28, 2011_____

Date

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[FR Doc. 2011-31222 Filed 12/01/2011 at 4:15 pm; Publication Date: 12/06/2011]